

## REMARKS

In the Final Office Action<sup>1</sup>, the Examiner rejected claims 1, 2, and 8 under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. Patent Application No. 2001/0041018 A1 to Sonoda ("*Sonoda*") and U.S. Patent No. 7,081,918 B2 to Takemoto ("*Takemoto*"); rejected claims 3-5 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Sonoda* and *Takemoto* and further in view of Gonzalez, Rafael C. and Woods, Richard E., *Digital Image Processing* (2nd edition) ("*Gonzalez*"); and rejected claim 7 as being unpatentable over the combination of *Sonoda*, *Takemoto*, and *Gonzalez* and further in view of U.S. Patent No. 5,517,333 A to Tamura et al. ("*Tamura*").

Claims 1, 3-5, and 7-8 have been amended, claim 2 has been canceled, and claims 9-11 are new. Claims 1, 3-5 and 7-11 are now pending.

Applicant respectfully traverses the rejection of claims 1 and 8 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Sonoda* and *Takemoto*. A *prima facie* case of obviousness has not been established.

Claim 1, as amended, recites:

1. An image processing apparatus comprising:

a conversion means for generating a tone-converted image by converting luminance  $L_1$  of pixels comprising a first input image based on a conversion function;

a reduced image generation means for generating a reduced image from the tone-converted image;

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<sup>1</sup> The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicant declines to automatically subscribe to any statement or characterization in the Office Action.

a smoothing means for generating a smoothed image having luminance  $L_c$  of pixels comprising the first input image based on an interpolation calculation using pixels comprising the reduced image; and

a grayscale conversion means for generating a contrast-corrected image based on luminance  $L_c$  of pixels comprising the first input image, luminance  $L_1$  of pixels comprising the smoothed image, and a predetermined gain value  $g$ ,

wherein gain value  $g$  is determined by an inverse number of a gradient of a tone curve.

Neither *Sonoda* nor *Takemoto* discloses at least the smoothing means and the grayscale conversion means of amended claim 1.

As acknowledged in the Office Action, *Sonoda* does not disclose “a smoothing means for generating a smoothed image having luminance  $L_c$  of pixels comprising the first input image *based on an interpolation calculation using pixels comprising the reduced image,*” as recited in amended claim 1 (emphasis added). (Final Office Action at page 4.) Thus, *Sonoda* cannot disclose “a grayscale conversion means for generating a contrast-corrected image based on . . . luminance  $L_1$  of pixels comprising *the smoothed image,*” as recited in amended claim 1 (emphasis added). *Sonoda* also does not disclose “a predetermined gain value  $g$ , wherein gain value  $g$  is determined by an inverse number of a gradient of a tone curve,” as recited in amended claim 1. *Sonoda* discloses “a factor ‘a’ which is a constant,” *Sonoda* at paragraph [0059], but does not mention or suggest that any gain value is “determined by an inverse number of a gradient of a tone curve.” *Takemoto* fails to cure the deficiencies of *Sonoda*.

*Takemoto* does not disclose “a smoothing means for generating a smoothed image having luminance  $L_c$  of pixels comprising the first input image based on an

interpolation calculation using pixels comprising the reduced image,” as recited in amended claim 1. *Takemoto* also does not disclose “a grayscale conversion means for generating a contrast-corrected image based on luminance  $L_c$  of pixels comprising the first input image, luminance  $L_1$  of pixels comprising the smoothed image, and a predetermined gain value  $g$ , wherein gain value  $g$  is determined by an inverse number of a gradient of a tone curve,” as recited in amended claim 1. Nor does the Examiner rely on *Takemoto* for such teachings.

Accordingly, *Sodona* and *Takemoto* fail to render the subject matter of claim 1 obvious. Independent claims 8 and 10, though different in scope than claim 1, are allowable over the combination of *Sodona* and *Takemoto* for at least the same reasons as claim 1. Claims 3-5, 7, 9, and 11 depend from claims 1, 8, or 10, and thus, are allowable over the combination of *Sodona* and *Takemoto* for at least the same reasons as claim 1.

Applicant respectfully traverses the rejection of claims 3-5 under 35 U.S.C. § 103(a) as being unpatentable over the combination of *Sonoda* and *Takemoto* and further in view of *Gonzalez* and the rejection of claim 7 as being unpatentable over the combination of *Sonoda*, *Takemoto*, and *Gonzalez* and further in view of *Tamura*. A *prima facie* case of obviousness has not been established. Claims 3-5 and 7 depend from claim 1 and thus are allowable over the combination of *Sonoda* and *Takemoto* for at least the same reasons as amended claim 1. *Gonzalez* and *Tamura* fail to cure the deficiencies of *Sonoda* and *Takemoto*.

Neither *Gonzalez* nor *Tamura* disclose “a smoothing means for generating a smoothed image having luminance  $L_c$  of pixels comprising the first input image based

on an interpolation calculation using pixels comprising the reduced image,” as recited in amended claim 1. Neither *Gonzalez* nor *Tamura* disclose “a grayscale conversion means for generating a contrast-corrected image based on luminance  $L_c$  of pixels comprising the first input image, luminance  $L_1$  of pixels comprising the smoothed image, and a predetermined gain value  $g$ , wherein gain value  $g$  is determined by an inverse number of a gradient of a tone curve,” as recited in amended claim 1. Nor does the Examiner rely on either *Gonzalez* or *Tamura* for such teachings.

In view of the foregoing remarks, Applicant respectfully requests reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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